

Radiation therapy for cervical cancer.

Guideline ID: 1838

Published: 2020 Jul-Aug

American Society for Radiation Oncology (ASTRO)

Chino J, Annunziata CM, Beriwal S, et al. Radiation therapy for cervical cancer: an ASTRO clinical practice guideline. Pract Radiat Oncol. 2020 Jul-Aug;(Suppl):1-41. [135 references]

[View Original Guideline](#)

Overview

Guideline Objective

To review the evidence and provide recommendations for the indications and appropriate techniques of radiation therapy (RT) in the treatment of nonmetastatic cervical cancer

Patient Population

Adult women (≥ 18 years) with a diagnosis of cervical cancer

Recommendations

Recommendation Statements

Key Question (KQ) 1: Postoperative Radiation Therapy (RT) With and Without Systemic Therapy

Following primary surgery for cervical cancer, when is it appropriate to deliver postoperative RT with or without systemic therapy?

1. For women undergoing surgery for cervical cancer who have high surgicopathologic risk factors, adjuvant external beam RT (EBRT) and concurrent platinum-based chemotherapy is recommended. (**Strength of recommendation: Strong; Quality of evidence: High**)

Implementation Remark: High-risk factors include positive margin(s) or positive lymph node(s) or extension into the parametrial tissue.

2. For women with cervical cancer and intermediate-risk factors, adjuvant EBRT is recommended to decrease locoregional recurrence. (**Strength of recommendation: Strong; Quality of evidence: High**)

Implementation Remark: Intermediate-risk factors include*:

- LVSI plus deep one-third cervical stromal invasion with any tumor size
- LVSI plus middle one-third stromal invasion and tumor size ≥ 2 cm
- LVSI plus superficial one-third stromal invasion and tumor size ≥ 5 cm
- No LVSI but deep or middle one-third stromal invasion plus tumor size ≥ 4 cm

* The original Gynecologic Oncology Group (GOG) 92 protocol estimated tumor size based on palpation; however, estimation based on pathologic or magnetic resonance imaging findings are an acceptable substitute.

KQ 2: Definitive RT With and Without Systemic Therapy; Hysterectomy After RT

When is it appropriate to deliver definitive RT with and without systemic therapy? When is it appropriate to perform a hysterectomy after RT for cervical cancer?

1. For women with International Federation of Gynecology and Obstetrics (FIGO) stage IB3-IVA* squamous cell or adenocarcinoma of the cervix, RT with concurrent platinum-based chemotherapy is recommended for definitive treatment. (**Strength of recommendation: Strong; Quality of evidence: High**)

Implementation Remark: Recommended dose for cisplatin is 40 mg/m² weekly for 5 to 6 cycles.

2. For women with FIGO stage IB3-IVA cervical cancer, a planned adjuvant hysterectomy after RT or chemoradiation is not recommended.[†] (**Strength of recommendation: Strong; Quality of evidence: High**)
3. In women with FIGO stage IA1-IB2 that are deemed medically inoperable, RT with or without chemotherapy is conditionally recommended. (**Strength of recommendation: Conditional; Quality of evidence: Expert Opinion**)

* Stage IIA1 cancers may be managed with radical hysterectomy in well-selected (e.g., non-bulky, with limited vaginal involvement) cases.

† In the setting of biopsy-proven gross residual disease after point-A–based dose specification for brachytherapy, surgery may be an option.

KQ 3: Intensity Modulated Radiation Therapy (IMRT)

For patients receiving definitive or postoperative RT for cervical cancer, when is it appropriate to deliver IMRT?

1. In women with cervical cancer treated with postoperative RT with or without chemotherapy, IMRT is recommended to decrease acute and chronic toxicity. (**Strength of recommendation: Strong; Quality of evidence: Moderate [acute]; Low [chronic]**)
2. In women with cervical cancer treated with definitive RT with or without chemotherapy, IMRT is conditionally recommended to decrease acute and chronic toxicity. (**Strength of recommendation: Conditional; Quality of evidence: Moderate [acute]; Moderate [chronic]**)

KQ 4: Brachytherapy

For patients receiving definitive or postoperative RT for cervical cancer, when is brachytherapy indicated?

1. For women receiving definitive RT for intact cervical cancer, brachytherapy is recommended. (**Strength of recommendation: Strong; Quality of evidence: Moderate**)

2. For women with cervical cancer receiving postoperative whole pelvis radiation, a brachytherapy boost is conditionally recommended in the presence of positive margin(s). (**Strength of recommendation: Conditional; Quality of evidence: Low**)

Implementation Remark: The brachytherapy technique selected is based on the location and volume of the positive margin(s).

KQ 5: Brachytherapy Technique

For patients receiving definitive RT for cervical cancer, what is the optimal dose/fractionation schedule, imaging, and technique for the delivery of brachytherapy?

Optimal Imaging and Technique for the Delivery of Brachytherapy

1. For women receiving brachytherapy for cervical cancer, intra-procedure imaging is recommended if available. (**Strength of recommendation: Strong; Quality of evidence: Low**)
2. For women receiving brachytherapy for cervical cancer, magnetic resonance imaging (MRI) or computed tomography (CT)-based planning to a volume-based prescription is recommended. (**Strength of recommendation: Strong; Quality of evidence: Moderate**)
3. For women receiving brachytherapy for cervical cancer, if volume-based planning cannot be performed, then 2-D/point-based planning is recommended. (**Strength of recommendation: Strong; Quality of evidence: Moderate**)

Optimal Dose/Fractionation Schedule for the Delivery of Brachytherapy

4. For women treated with definitive RT for cervical cancer, the total EQD2₁₀ of EBRT and brachytherapy should be ≥ 8000 cGy. (**Strength of recommendation: Strong; Quality of evidence: Moderate**)
5. For women with cervical cancer receiving volume-based brachytherapy, high-risk clinical target volume (HR-CTV) D90 greater than or equal to prescription dose (≥ 8000 cGy) is conditionally recommended, with careful consideration of normal tissue constraints. (**Strength of recommendation: Conditional; Quality of evidence: Moderate**)

Implementation Remarks:

- For patients with poor response or large-volume (>4 cm) disease, D90 ≥8500 cGy is reasonable.
- Utilization of a hybrid intracavitary/interstitial technique can help improve the dose distribution when not achieving appropriate target and/or OAR dose constraints with an intracavitary alone approach.

Optimal Organs at Risk (OARs) Constraints of Brachytherapy

6. In women treated with brachytherapy for intact cervical cancer, volumetric contouring of the OARs and use of appropriate dose constraints are recommended. (**Strength of recommendation: Strong; Quality of evidence: Moderate**)
7. If volumetric planning is not available for women treated with brachytherapy for intact cervical cancer, 2-D/point-based dose constraints should be applied. (**Strength of recommendation: Strong; Quality of evidence: Moderate**)

Evidence Rating Scheme

Overall Quality of Evidence Grade	Type/Quality of Study	Evidence Interpretation
High	• 2 or more well-conducted and highly-generalizable randomized controlled trials (RCTs) or meta-analyses of such trials.	The true effect is very likely to lie close to the estimate of the effect based on the body of evidence.
Moderate	• 1 well-conducted and highly-generalizable RCT or a meta-analysis of such trials OR	The true effect is likely to be close to the estimate of the effect based on the body of evidence, but it is possible that it is substantially different.

	• 2 or more RCTs with some weaknesses of procedure or generalizability OR • 2 or more strong observational studies with consistent findings.	
Low	• 1 RCT with some weaknesses of procedure or generalizability OR • 1 or more RCTs with serious deficiencies of procedure or generalizability or extremely small sample sizes OR • 2 or more observational studies with inconsistent findings, small sample sizes, or other problems that potentially confound interpretation of data.	The true effect may be substantially different from the estimate of the effect. There is a risk that future research may significantly alter the estimate of the effect size or the interpretation of the results.
Expert Opinion*	• Consensus of the panel based on clinical judgement and experience, due to absence of evidence or limitations in evidence.	Strong consensus ($\geq 90\%$) of the panel guides the recommendation despite insufficient evidence to discern the true magnitude and direction of the net effect. Further research may better inform the topic.

* A lower quality of evidence, including expert opinion, does not imply that the recommendation is conditional. Many important clinical questions addressed in guidelines do not lend themselves to clinical trials but there still may be consensus that the benefits of a treatment or diagnostic test clearly outweigh its risks and burden.

Recommendation Rating Scheme

Strength of Recommendation	Definition	Overall Quality of Evidence Grade	Recommendation Wording
Strong	• Benefits clearly outweigh risks and burden, or risks and burden clearly outweigh benefits. • All or almost all informed people would make the recommended choice.	Any (usually high, moderate, or expert opinion)	"Recommend/Should"
Conditional	• Benefits are finely balanced with risks and burden or appreciable uncertainty exists about the magnitude of benefits and risks. • Most informed people would choose the recommended course of action, but a substantial number would not. • A shared decision-making approach regarding patient values and	Any (usually moderate, low, or expert opinion)	"Conditionally Recommend"

	preferences is particularly important.		
--	--	--	--

Related Content

Supporting Documents

- [Evidence Tables.](#)
- [ASTRO Clinical Practice Guideline Methodology Guide; 2019 May.](#)
- [ASTRO Guideline Development Process Overview.](#)

Implementation Tools

- [Executive Summary; 2020 Jul-Aug.](#)
- [Slide Set; 2020.](#)
- [Oncology Quality Measures.](#)

Patient Education

- [Radiation Therapy for Gynecologic Cancers; 2020.](#)
- [RT for Gynecologic Cancers Side Effects.](#)
- [What Questions Should I Ask My Doctor?.](#)
- [Radiation Treatment Overview.](#)

Note: This patient information is intended to help patients better understand their health and their diagnosed disorders. Patients and their representatives should still consult with a licensed health care professional for evaluation of treatment options as well as answers to their personal medical questions.

Disclaimer

If you desire to use content from the original clinical practice guideline cited herein, you must contact the guideline developer directly to obtain permission rights.

ECRI's Guideline Profiles are designed to provide information and assist decision-making. Variations in practice will inevitably, and appropriately, occur when clinicians take into account the needs and preferences of individual patients, available resources, and limitations unique to an institution or type of practice. Every healthcare professional using these Guideline Profiles is responsible for evaluating the appropriateness of applying them in a clinical setting.

TRUST Scorecard

Composition of Guideline Development Group (GDG)

Multidisciplinary GDG Members

Yes

Methodologist Involvement

Yes

Incorporation of Patient and Public Perspective



Systematic Review of Evidence

Literature Search



Study Selection



Evidence Synthesis



Foundations for Recommendations

Strength of Evidence Grade



Description of Benefits and Harms of Recommendations



Summary of Evidence Supporting Recommendations



Strength of Recommendations Rating



Clear Articulation of Recommendations



Funding Source

Yes

Disclosure and Management of Financial Conflicts of Interests



External Review



Updating

